



McGovern Institute for Brain Research at MIT

Biocomplexity Faculty Search Committee
c/o T. Dawson
Department of Physics,
Indiana University,
Swain Hall West 117,
727 East 3rd St.
Bloomington IN, 47405-7105

March 25, 2005

Dear T. Dawson,

It is a pleasure to write a letter in support of Alex Kozhevnikov's application to Indiana University. I have known Alex since he joined my lab as a postdoctoral fellow in my lab in the Biological Computation Research Department at Bell Laboratories, three and a half years ago. Alex came from a top-notch lab in the Physics Department at Yale, where for his thesis work he made high-precision, low-noise measurements of superconductor-metal junctions. At that time, he became interested in switching fields and learning neuroscience. In the 3.5 years since he began working in my lab, Alex has repeatedly demonstrated his commitment to his new field, and has established himself as a first-class experimental neuroscientist. He has taken seriously the task of educating himself in neuroscience. His combination of quantitative and technical skill and dedication to neuroscience will make a valuable contribution to any interdisciplinary research institution.

Alex was very quick in making the transition from experimental physics to experimental neuroscience. He rapidly learned the surgical and experimental techniques for electrophysiology in head-fixed sleeping (not anesthetized) songbirds. When he had difficulty with a particular task, he simply focused more intensely, often working into the early morning hours, until he had the problem solved. In only three weeks, he was carrying out the entire experiment on his own. I was extremely impressed with Alex's enthusiasm, tenacity and innate experimental skill. Another telling aspect of Alex's style is that he will most often solve problems his own way, rather than asking someone else how to do something.

His strong quantitative training comes across clearly in his ability to think about difficult analytical problems in the course of his work in my lab. For example, he has solved a number of interesting theoretical statistical problems important to the analysis of our experiments in the sleeping bird. His training in an experimental physics lab has given Alex prodigious laboratory skills; he is comfortable building electronic circuits, as well as fabricating small mechanical devices for use in his experiments. Alex helped develop the techniques for antidromically-identifying premotor neurons in this nucleus by

stimulating in nucleus RA. Using the motorized microdrive developed in our lab, Alex discovered that RA-projecting HVC neurons generate a single burst of spikes during each song, which we have interpreted as a sparse code for temporal order. His work has completely transformed our understanding of motor control in the vocal-control system of the songbird. I must say that it was largely Alex's stunning results that got me the job at MIT after I was laid-off during the collapse of basic research at Bell Labs.

Alex is creative and capable, and, I predict, will succeed admirably in building his own research program. He has a knack for explaining things, and will do well teaching. On a personal level, Alex is a delightful colleague – he is serious, yet is pleasure to work with. It is with great enthusiasm that I recommend Alex for a faculty position at Indiana University.

Sincerely,

A handwritten signature in cursive script that reads "Michale Fee". The signature is written in black ink and is positioned below the word "Sincerely,".

Michale Fee, Ph.D.

Associate Professor
McGovern Institute for Brain Research
Department of Brain and Cognitive Sciences
Massachusetts Institute of Technology